


PAGE 1 OF 1

**APPLICATION FOR UNITED STATES PATENT  
DECLARATION AND POWER OF ATTORNEY**

As a below named inventor, I declare that my residence, post office address and citizenship are as stated below next to my name; that I verily believe that I am the original, first and sole inventor if only one name is listed below, or an original, first and joint inventor if plural inventors are named below, of the subject matter which is claimed and for which a patent is sought on the invention entitled as set forth below, which is described in the attached specification [Application Serial No. \_\_\_\_\_, filed: \_\_\_\_\_]; that I have reviewed and understand the contents of the specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration; that no application for patent or inventor's certificate on this invention has been filed by me or my legal representatives or assigns in any country foreign to the United States of America; and that I acknowledge my duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56;

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

TITLE OF INVENTION: <b>Antennas Supporting High Density of Wireless Users in Specific Directions</b>		
I HEREBY APPOINT THE FOLLOWING ATTORNEYS TO PROSECUTE THIS APPLICATION AND TRANSACT ALL BUSINESS IN THE PATENT AND TRADEMARK OFFICE CONNECTED THEREWITH <b>Practitioners at Customer Number: 23494</b>		
SEND CORRESPONDENCE TO: <b>Correspondence Address of Customer Number: 23494</b>		DIRECT TELEPHONE CALLS TO: Mr. Dennis Moore Tel: (972)-917-5646 Fax: (972)-917-4418
NAME OF INVENTOR: (1) Ravishankar SANKARANARAYANAN	NAME OF INVENTOR:	NAME OF INVENTOR: (3)
RESIDENCE & POST OFFICE ADDRESS: 3478, 14th Main, H.A.L. 2nd Stage Bangalore (City), Karnataka (State) India - 560008	RESIDENCE & POST OFFICE ADDRESS:	RESIDENCE & POST OFFICE ADDRESS:
COUNTRY OF CITIZENSHIP: India	COUNTRY OF CITIZENSHIP:	COUNTRY OF CITIZENSHIP:
SIGNATURE OF INVENTOR: 	SIGNATURE OF INVENTOR:	SIGNATURE OF INVENTOR:
DATE: MM/DD/YYYY 12/23/2003	DATE: MM/DD/YYYY	DATE: MM/DD/YYYY

# RECORDATION FORM COVER SHEET PATENTS ONLY

U.S. Department of Commerce  
Patent and Trademark Office

To the Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):  
SANKARANARAYANAN Ravishankar  
TEXAS INSTRUMENTS (INDIA) PRIVATE LIMITED  
Additional name(s) of conveying party(ies) attached? ☐ yes ☒ no

2. Name and address of receiving party(ies):

Name: Texas Instruments Incorporated

Street Address: P. O. Box 655474, MS 3999

City: Dallas State: Texas Zip Code: 75265

Country: U.S.A.

Additional name(s) & address(es) attached? ☐ yes ☒ no

3. Nature of Conveyance:

- ☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Other \_\_\_\_\_

Execution Date(s): 01/13/2004,

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is 01/13/2004

A. Patent Application No(s).

B. Patent No(s).

Additional numbers attached? ☐ yes ☒ no

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Mr. Dennis Moore  
Address: Texas Instruments Incorporated  
P.O. Box 655474, MS 3999  
Dallas, Texas 75265  
(972)-917-5646 (Phone)

6. Total number of applications and patents involved

1

7. Total fee (37 C.F.R. § 3.41).....\$ 40.00

☐ Enclosed

☒ Authorized to be charged to Deposit Account

8. Deposit Account Number: 20-0668

Attorney Docket No. TI-37177

DO NOT USE THIS SPACE

9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*

Narendra Reddy Thappeta  
Name of Person Signing  
Registration Number 41,416

Naren Thappeta  
Signature

January 13, 2003  
Date

Total number of pages including cover sheet, attachments and document 10

Mail documents to be recorded with required cover sheet information to:  
Commissioner of Patents and Trademarks, Box Assignments  
Washington, D.C. 20231

**ASSIGNMENT**

WHEREAS, the below named inventor(s) (hereinafter INVENTOR) is the inventor or an inventor of an invention for which a U.S. patent application has been filed as set forth below, and made the said invention in the course of employment by TEXAS INSTRUMENTS (INDIA) PRIVATE LIMITED, a company organized according to the laws of India, having an office at Golf View Homes, Wind Tunnel Road, Murugeshpalaya, Bangalore 560 017, India, hereinafter (TIIN);

WHEREAS, TEXAS INSTRUMENTS INCORPORATED, a corporation organized and existing under the laws of the State of Delaware, having a place of business at 7839 Churchill Way, Mail Station 3999, Dallas, Texas 75251, USA, is desirous of acquiring our entire right, title interest in and to the said invention outside of India, and in and to the said application and any Letters Patent that may issue thereon;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, by this Assignment, TIIN and INVENTOR sell and assign to the said TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, the entire right, title and interest in and to the said invention in the U.S.A. and in all other countries outside India; in and to the U.S. patent application as identified below and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof; and to file applications and obtain patents in its own name in any said other country or group of countries, and to claim priority under the terms of the International Convention for the Protection of Industrial Property or any other relevant convention;

TIIN and INVENTOR hereby authorize and request the Commissioner of Patents to issue all U.S. patents for said invention, or patents resulting therefrom, insofar as our interest is concerned to the said TEXAS INSTRUMENTS INCORPORATED, as assignee of the entire right, title and interest.

TIIN and INVENTOR further agree to communicate to TEXAS INSTRUMENTS INCORPORATED or to its successors, assigns and legal representatives, any facts known to them respecting the said invention, and at the expense of TEXAS INSTRUMENTS INCORPORATED, sign any and all patent applications, assignments, affidavits and other lawful papers, execute all applications, make all lawful oaths, testify in any legal or quasi-legal proceedings and generally everything possible to said TEXAS INSTRUMENTS INCORPORATED, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries outside India.

I hereby authorize and request my attorney, Narendra Reddy Thappeta, Esq., Registration Number 41,416, to insert here in parenthesis (application number \_\_\_\_\_, filed: \_\_\_\_\_) of said application when known.

Title of Invention: "Antennas Supporting High Density of Wireless Users in Specific Directions"

Inventor(s): Ravishankar SANKARANARAYANAN

IN WITNESS WHEREOF, this Agreement has been executed as set forth below:

Signed at: Bangalore, India on Jan 10 2003  
(Month/Day/Year)

by Texas Instruments (India) Private Limited

Name: Dr. Biswadip Mitra

Title: Managing Director

Signature: 

and by the INVENTOR(S):

Name: Ravishankar SANKARANARAYANAN

Signature: \_\_\_\_\_

Address: 3478, 14th Main, H.A.L. 2nd Stage  
Bangalore (City), Karnataka (State)

Date: \_\_\_\_\_/2003  
(Month/Day/Year)

**ASSIGNMENT**

WHEREAS, the below named inventor(s) (hereinafter INVENTOR) is the inventor or an inventor of an invention for which a U.S. patent application has been filed as set forth below, and made the said invention in the course of employment by TEXAS INSTRUMENTS (INDIA) PRIVATE LIMITED, a company organized of according to the laws of India, having an office at Golf View Homes, Wind Tunnel Road, Murugeshpalaya, Bangalore 560 017, India, hereinafter (TIIN);

WHEREAS, TEXAS INSTRUMENTS INCORPORATED, a corporation organized and existing under the laws of the State of Delaware, having a place of business at 7839 Churchill Way, Mail Station 3999, Dallas, Texas 75251, USA, is desirous of acquiring our entire right, title interest in and to the said invention outside of India, and in and to the said application and any Letters Patent that may issue thereon;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, by this Assignment, TIIN and INVENTOR sell and assign to the said TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, the entire right, title and interest in and to the said invention in the U.S.A. and in all other countries outside India; in and to the U.S. patent application as identified below and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof; and to file applications and obtain patents in its own name in any said other country or group of countries, and to claim priority under the terms of the International Convention for the Protection of Industrial Property or any other relevant convention;

TIIN and INVENTOR hereby authorize and request the Commissioner of Patents to issue all U.S. patents for said invention, or patents resulting therefrom, insofar as our interest is concerned to the said TEXAS INSTRUMENTS INCORPORATED, as assignee of the entire right, title and interest.

TIIN and INVENTOR further agree to communicate to TEXAS INSTRUMENTS INCORPORATED or to its successors, assigns and legal representatives, any facts known to them respecting the said invention, and at the expense of TEXAS INSTRUMENTS INCORPORATED, sign any and all patent applications, assignments, affidavits and other lawful papers, execute all applications, make all lawful oaths, testify in any legal or quasi-legal proceedings and generally everything possible to said TEXAS INSTRUMENTS INCORPORATED, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries outside India.

I hereby authorize and request my attorney, Narendra Reddy Thappeta, Esq., Registration Number 41,416, to insert here in parenthesis (application number \_\_\_\_\_, filed: \_\_\_\_\_) of said application when known.

Title of Invention: "Antennas Supporting High Density of Wireless Users in Specific Directions"

Inventor(s): Ravishankar SANKARANARAYANAN

IN WITNESS WHEREOF, this Agreement has been executed as set forth below:

Signed at: Bangalore, India on        /2003  
(Month/Day/Year)

by Texas Instruments (India) Private Limited

Name: Dr. Biswadip Mitra

Title: Managing Director

Signature: \_\_\_\_\_

and by the INVENTOR(S):

Name: Ravishankar SANKARANARAYANAN

Signature: 

Address: 3478, 14th Main, H.A.L. 2nd Stage  
Bangalore (City), Karnataka (State)

Date: 12 / 23 / 2003 /2003  
(Month/Day/Year)